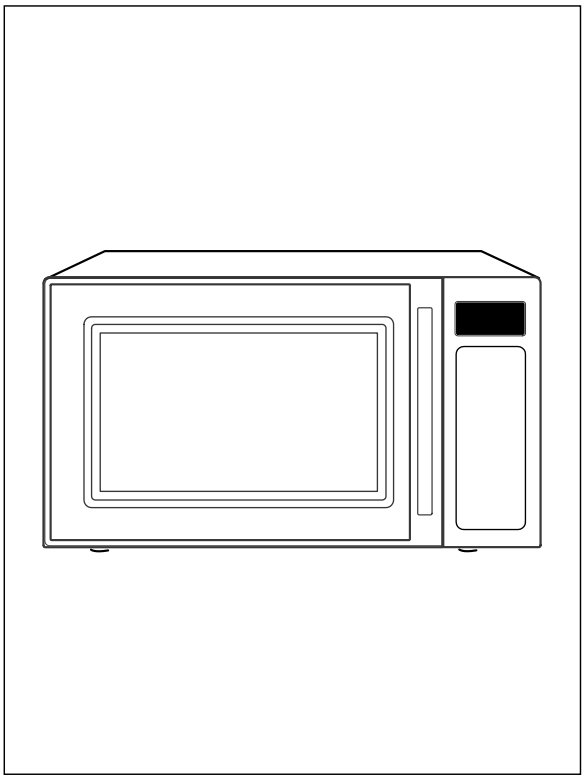
SAMSUNG

MICROWAVE OVEN

CE1150R
CE1150R(SILVER)

SERVICE Manual

MICROWAVE OVEN



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ELECTRONICS

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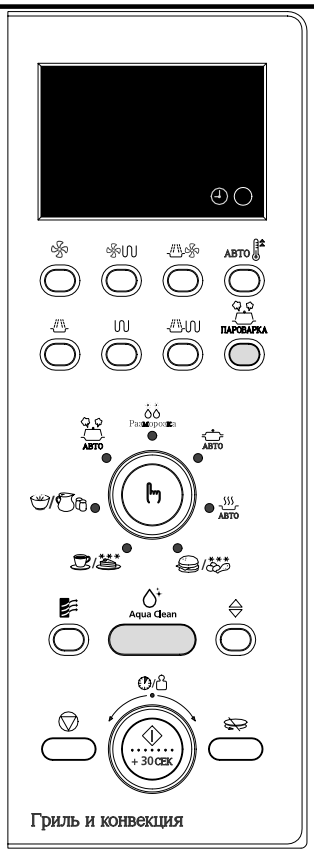
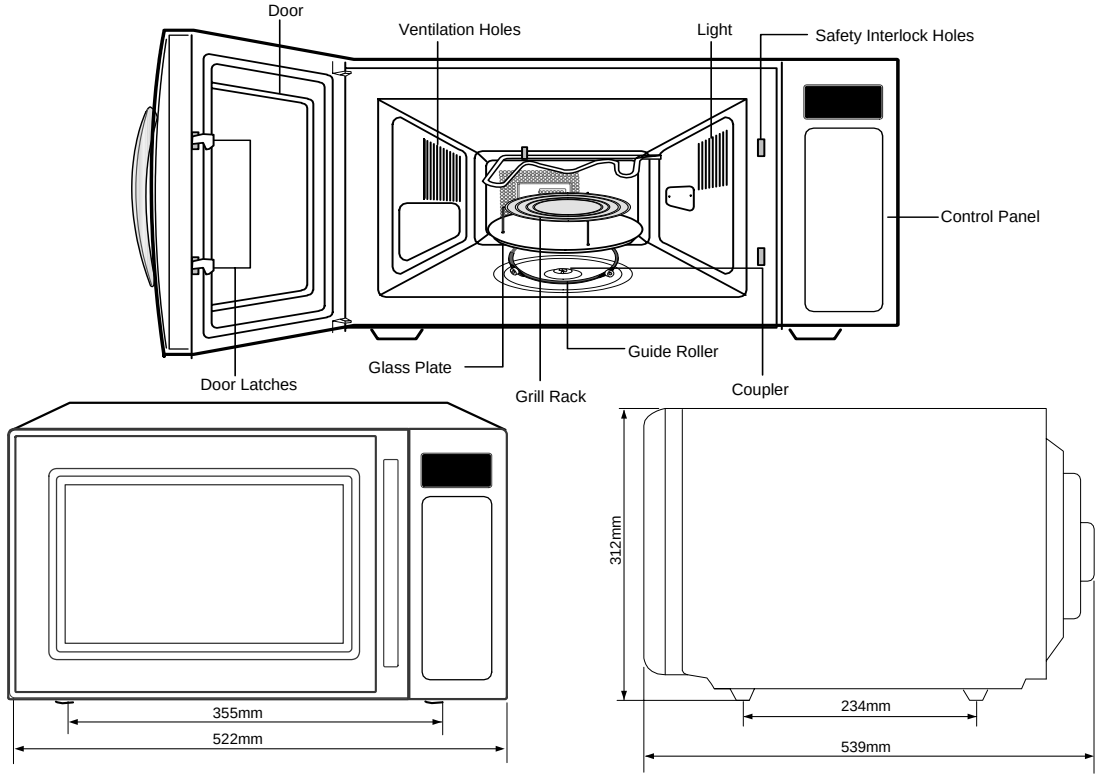
3. Operating Instructions

3-1 Control Panel

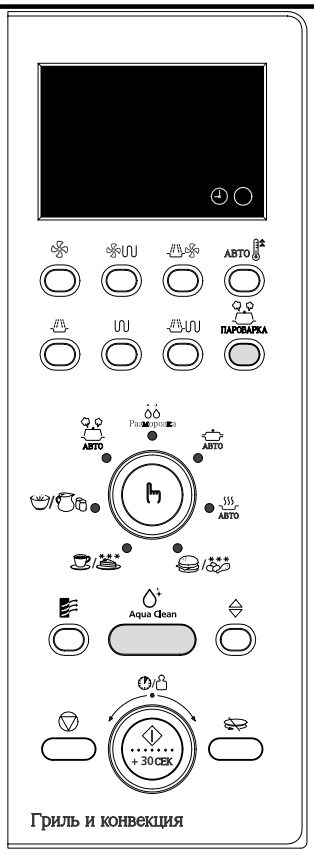


3-2 Features & External Views

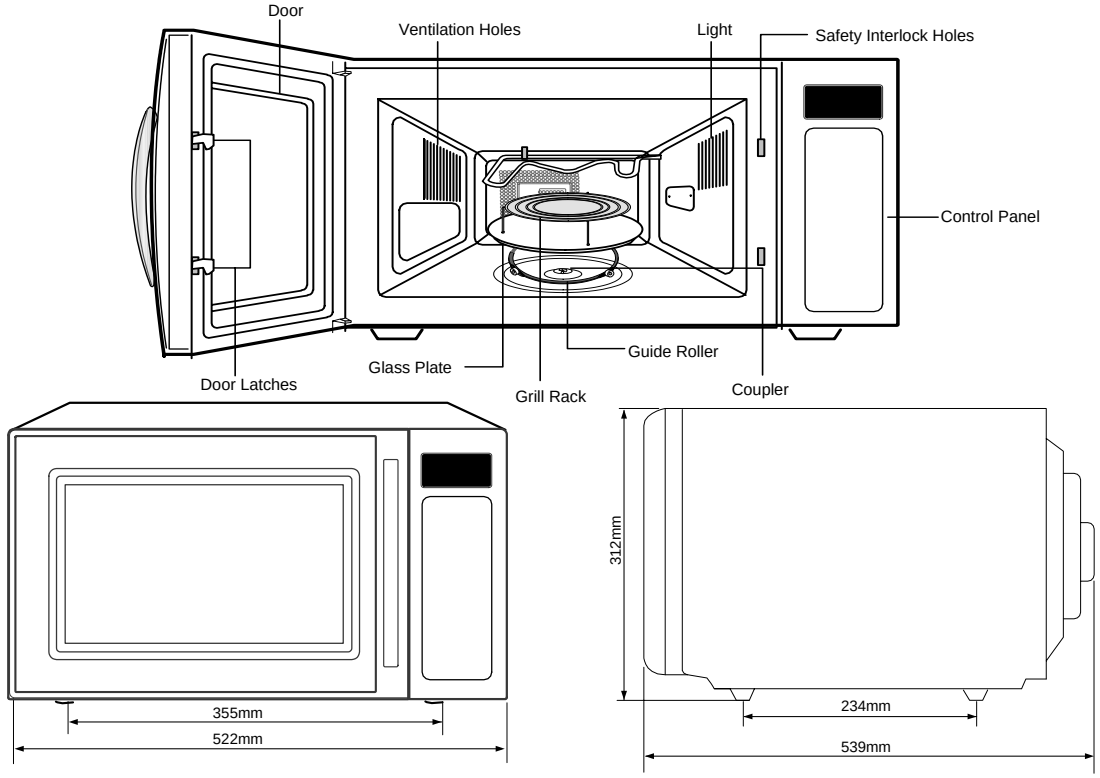


3. Operating Instructions

3-1 Control Panel



3-2 Features & External Views

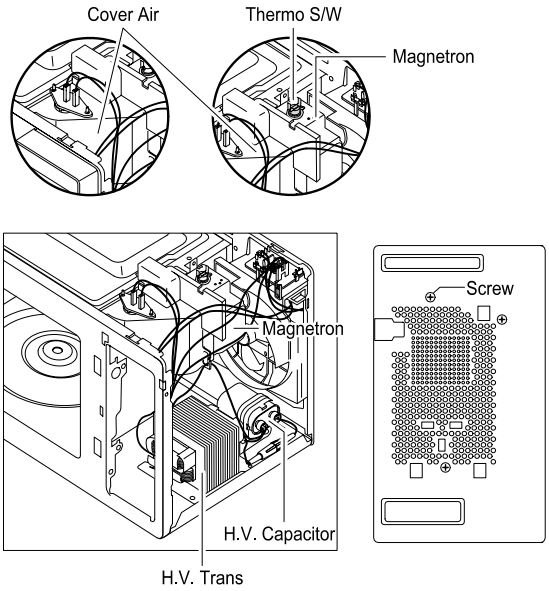


4. Disassembly and Reassembly

4-1 Replacement of Magnetron, Motor Assembly and Lamp

Remove the magnetron including the shield case, permanent magnet, choke coils and capacitors (all of which are contained in one assembly).

1. Disconnect all lead wires from the magnetron and lamp.
2. Remove the bracket mounting.
3. Remove the magnetron supporter.
4. Remove the air cover.
5. Remove screws securing the magnetron to the wave guide.
6. Take out the magnetron very carefully.
7. Remove screws from the back panel.
8. Take out the fan motor.
9. Remove the oven lamp by rotating to pull out from hole of air cover.



NOTE1: When removing the magnetron, make sure that its antenna does not hit any adjacent parts, or it may be damaged.

NOTE2: When replacing the magnetron, be sure to remount the magnetron gasket inthe correct position and make sure the gasket is in good condition.

4-2 Replacement of High Voltage Transformer

1. Discharge the high voltage capacitor.
2. Disconnect all the leads.
3. Remove the mounting bolts.
4. Reconnect the leads correctly and firmly.

PRECAUTION

Servicemen should remove their watches whenever
working close to or replacing the magnetron.

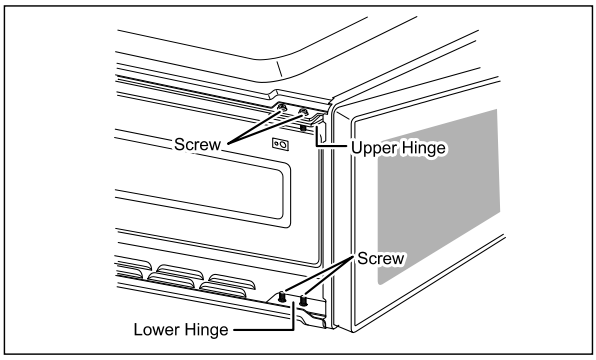
PRECAUTION

There exists HIGH VOLTAGE ELECTRICITY with high current capabilities in the circuits of the HIGH VOLTAGE TRANSFORMER secondary and filament terminals. It is extremely dangerous to work on or near these circuits with the oven energized.
DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

4-3 Replacement of Door Assembly

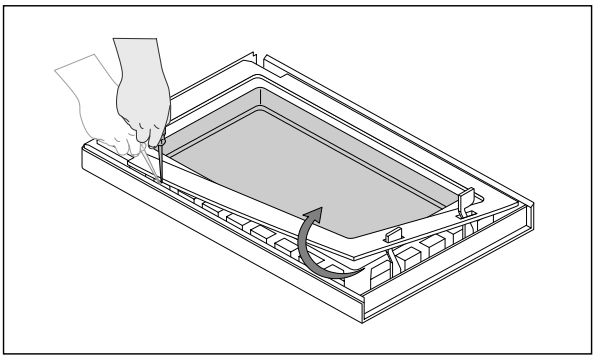
4-3-1 Removal of Door Assembly

Remove hex bolts securing the upper hinge and lower hinge. Then remove the door assembly.



4-3-2 Removal of Door "C"

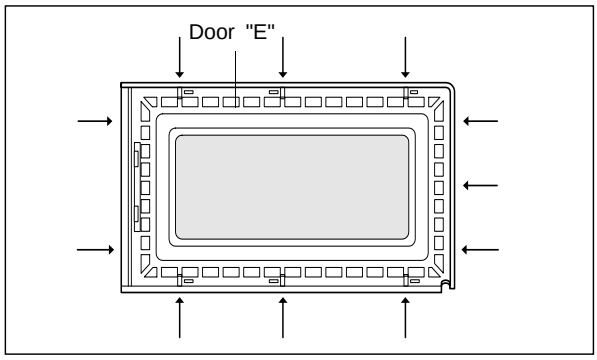
Insert flat screwdriver into the gap between Door "E" and Door "C" to remove Door "C". Be careful when handling Door "C" because it is fragile.



4-3-3 Removal of Door "E"

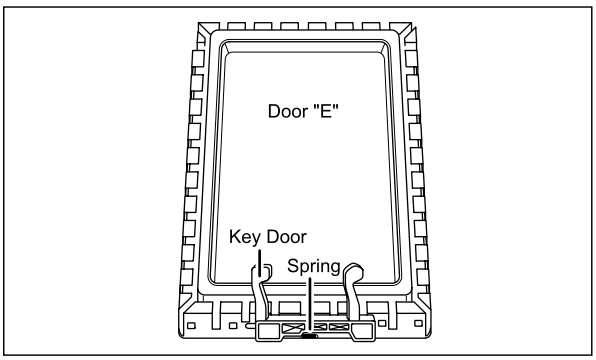
Following the procedure as shown in the figure, insert and bend a thin metal plate between Door "E" and Door "A" until you hear the 'tick' sound.

1. Insertion depth of the thin metal plate should be 0.5mm or less.



4-3-4 Removal of Key Door & Spring

Remove pin hinge from Door "E"
Detach spring from Door "E" and key door.



4-3-5 Reassembly Test

After replacement of defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent an excessive microwave leakage.

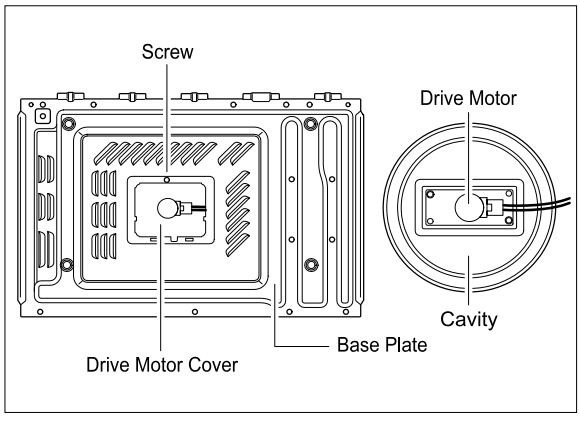
1. When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment.
2. Adjust so that the door has no play between the inner door surface and oven front surface. If the door assembly is not mounted properly, microwave energy may leak from the space between the door and oven.
3. Do microwave leakage test.

4-4 Replacement of Fuse

1. Disconnect the oven from the power source.
2. When 15A fuse blows out by the operation of interlock monitor switch failure, replace the primary interlock switch, door sensing switch, monitor switch and power relay.
3. When the above three switches operate properly, check if any other part such as the control circuit board, blower motor or high voltage transformer is defective.

4-5 Replacement of Drive Motor

1. Take out the glass tray, guide roller and coupler from cavity.
2. Turn the oven upside down to replace the drive motor.
3. Remove a screw securing the drive motor cover.
4. Disconnect all the lead wires from the drive motor.
5. Remove screws securing the drive motor to the cavity.
6. Remove the drive motor.
7. When replacing the drive motor, be sure to remount it in the correct position.
8. Connect all the leads to the drive motor.
9. Screw the drive motor cover to the base plate with a screw driver.



4-6 Replacement of Control Circuit Board

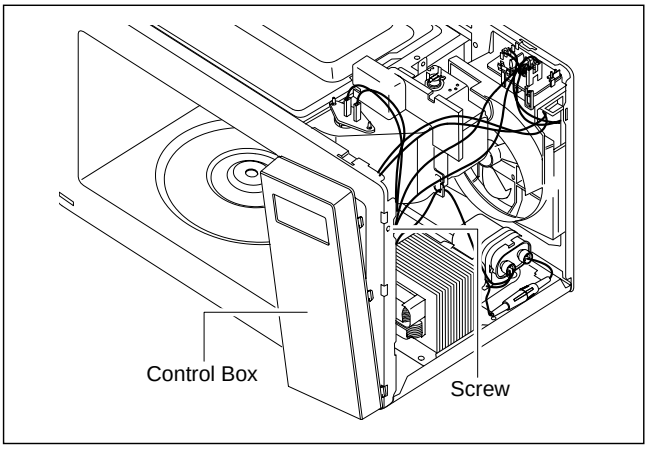
4-6-1 Removal of Control Box Assembly

1. Be sure to ground any static electric charge in your body and never touch the control circuit.

2. Disconnect the connectors from the control circuit board.

3. Remove screws securing the control box assembly.

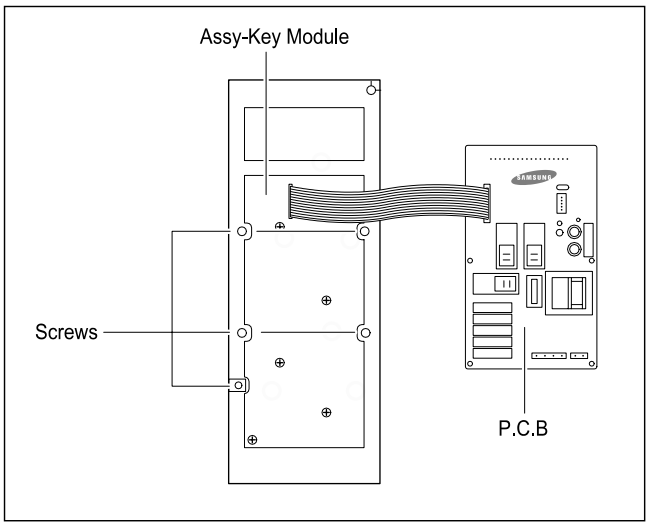
4. Remove the screw securing the ground tail of the keyboard.

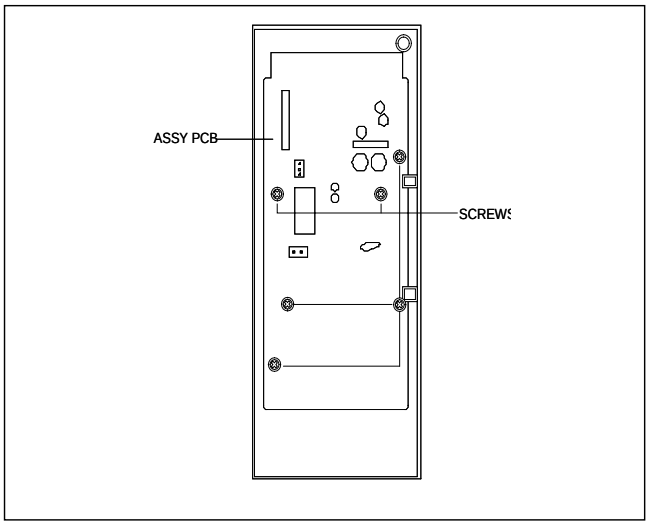


4-6-2 Removal of Ass'y P.C.B Assembly

1. Remove screws securing the control circuit board.

2. Lift up the control circuit board from the Ass'y control box.





5. Alignment and Adjustments

PRECAUTION

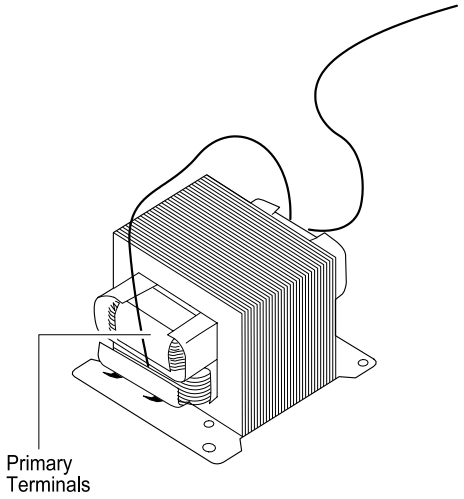
1. High voltage is present at the high voltage terminals during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

5-1 High Voltage Transformer

1. Remove connectors from the transformer terminals and check continuity.
2. Normal resistance readings are as follows:

Secondary	Approx. 137Ω
Filament	Approx. 0Ω
Primary	Approx. 1.594Ω

(Room temperature = 20°C)



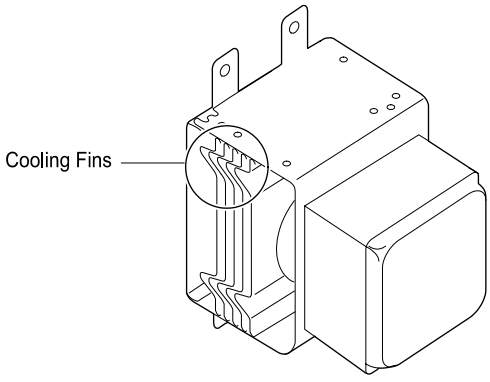
5-2 Low Voltage Transformer

1. The low voltage transformer is located on the Assy base plate.
2. Remove the low voltage transformer from the Assy base plate and check continuity.
3. Normal resistor reading is shown in the table.

Terminals	Resistance
1~2(Input)	290Ω.
3~4(Output)	4.0Ω..
5~6(Output)	1.0Ω.

5-3 Magnetron

1. Continuity checks can indicate only an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron :
2. Isolate the magnetron from the circuit by disconnecting its leads.
3. A continuity check across the magnetron filament terminals should indicate one ohm or less.
4. A continuity check between each filament terminal and magnetron case should read open.



5-4 High Voltage Capacitor

1. Check continuity of the capacitor with the meter set at the highest resistance scale.
2. Once the capacitor is charged, a normal capacitor shows continuity for a short time, and then indicates 9MΩ.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant 9MΩ.
5. Resistance between each terminal and chassis should read infinite.

5-5 High Voltage Diode

1. Isolate the diode from the circuit by disconnecting its leads.
2. With the ohm-meter set at the highest resistance scale, measure across the diode terminals. Reverse the meter leads and read the resistance. A meter with 6V, 9V or higher voltage batteries should be used to check the front-to back resistance of the diode (otherwise an infinite resistance may be read in both directions). The resistance of a normal diode will be infinite in one direction and several hundred KΩ in the other direction.

5-6 Main Relay and Power Control Relay

1. The relays are located on the PCB Ass'y. Isolate them from the main circuit by disconnecting the leads.
2. Operate the microwave oven with a water load in the oven. Set the power level set to high.
3. Check continuity between terminals of the relays after the start pad is pressed.

5-7 Adjustment of Primary Switch, Door Sensing Switch and Monitor Switch

Precaution

For continued protection against radiation hazard, replace parts in accordance with the wiring diagram and be sure to use the correct part number for the following switches: Primary and secondary interlock switches, and the interlock monitor switch (replace all together). Then follow the adjustment procedures below. After repair and adjustment, be sure to check the continuity of all interlock switches and the interlock monitor switch.

1. When mounting Primary switch and Interlock Monitor switch to Latch Body, consult the figure.

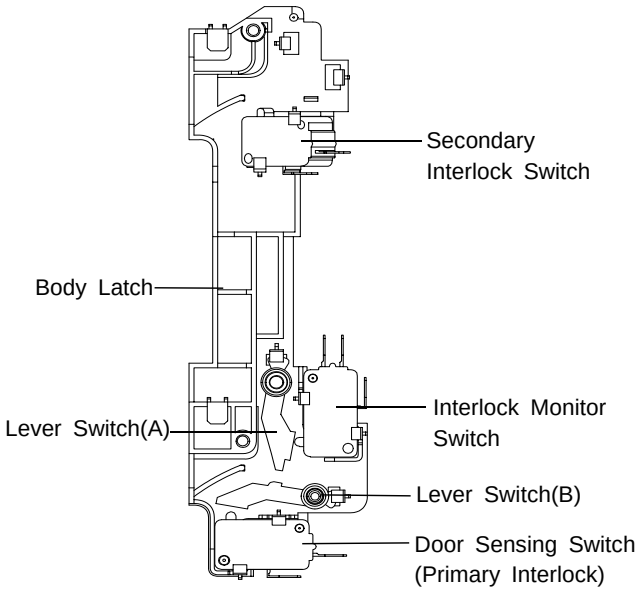
2. No specific adjustment during installation of Primary switch and Monitor switch to the latch body is necessary.

3. When mounting the Latch Body to the oven assembly, adjust the Latch Body by moving it so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the Latch Body to the oven assembly.

4. Reconnect to Monitor switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

5. Confirm that the gap between the switch housing and the switch actuator is no more than 0.5mm when door is closed.

6. **Interlock Switch Replacement** - When replacing faulty switches, be sure switch mounting tabs are not bent, broken or otherwise deficient in their ability to secure the switches in place.



	Door Open	Door Closed
Primary switch	∞	0
Monitor switch(COM-NC)	0	∞
Door Sensing S/W	∞	0

5-8 Output Power of Magnetron

CAUTION
MICROWAVE RADIATION
PERSONNEL SHOULD NOT ALLOW EXPOSURE TO MICROWAVE RADIATION FROM MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

The output power of the magnetron can be measured by performing a water temperature rise test.
Equipment needed :
* Two 1-liter cylindrical borosilicate glass vessel (Outside diameter 190 mm)
* One glass thermometer with mercury column
NOTE: Check line voltage under load. Low voltage will lower the magnetron output. Make all temperature and time tests with accurate equipment.
1. Fill the one liter glass vessel with water.
2. Stir water in glass vessel with thermometer, and record glass vessel's temperature ("T1", 10±1°C).
3. After moving the water into another glass vessel, place it in the center of the cooking tray. Set the oven to high power and operate for 49 seconds exactly. (3 seconds included as a holding time of magnetron oscillation:)
4. When heating is finished, stir the water again with the thermometer and measure the temperature ("T2").
5. Subtract T1 from T2. This will give you the water temperature rise. (△T)
6. The output power is obtained by the following formula;

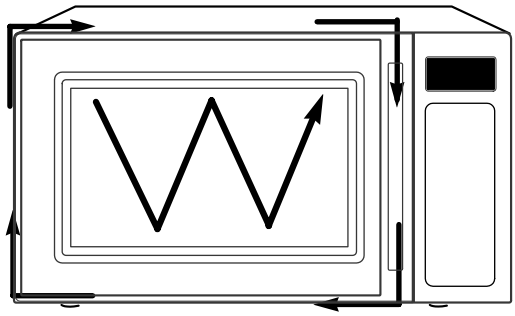
$$\text{Output Power} = \frac{4.187 \times 1000 \times \triangle T + 0.88 \times Mc \times (T_2 - T_0)}{46}$$

49 : Heating Time (sec)
4.187 : Coefficient for Water
1000 : Water (cc)
△T : Temperature Rise (T1-T2)
Mc : Cylindrical borosilicate glass weight
To : Room Temperature

7. Normal temperature rise for this model is 9°C to 11°C at 'HIGH'.

NOTE 1: Variations or errors in the test procedure will cause a variance in the temperature rise. Additional power test should be made if temperature rise is marginal.
NOTE 2: Output power in watts is computed by multiplying the temperature rise (step E) by a factor of 91 times the of centigrade temperature.

5-9 Procedure for Measurement of Microwave Energy Leakage

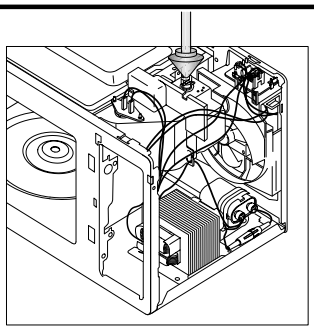


1) Pour 275±15cc of 20±5°C(68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
2) Start to operate the oven and measure the leakage by using a microwave energy survey meter.
3) Set survey meter with dual ranges to 2,450MHz.
4) When measuring the leakage, always use the 2 inch spacer cone with the probe. Hold the probe perpendicular to the cabinet door. Place the spacer cone of the probe on the door and/or cabinet door seam and move along the seam, the door viewing window and the exhaust openings moving the probe in a clockwise direction at a rate of 1 inch/sec. If the leakage testing of the cabinet door seam is taken near a corner of the door, keep the probe perpendicular to the areas making sure that the probe end at the base of the cone does not get closer than 5cm to any metal. If it gets closer than 5cm, erroneous readings may result.
5) Measured leakage must be less than 4mW/cm^2 after repair or adjustment.

Maximum allowable leakage is 5mW/cm^2 .
4mW/cm^2 is used to allow for measurement and meter accuracy

5-10 Check for Microwave Leakage

1. Remove the outer panel.
2. Pour 275±15cc of 20±5°C(68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
3. Start the oven at the highest power level.
4. Set survey meter dual ranges to 2,450MHz.
5. Using the survey meter and spacer cone as described above, measure near the opening of magnetron, the surface of the air guide and the surface of the wave guide as shown in the following photo.(but avoid the high voltage components.) The reading should be less than 4mW/cm^2 .



WARNING
AVOID THE HIGH VOLTAGE COMPONENTS

5-11 Note on Measurement

1) Do not exceed the limited scale.
2) The test probe must be held on the grip of the handle, otherwise a false reading may result when the operator's hand is between the handle and the probe.
3) When high leakage is suspected, do not move the probe horizontally along the oven surface; this may cause damage to the probe.
4) Follow the recommendation of the manufacturer of the microwave energy survey meter.

5-12 Leakage Measuring Procedure

5-12-1 Record keeping and notification after measurement
1) After adjustment and repair of a radiation preventing device, make a repair record for the measured values, and keep the data.
2) If the radiation leakage is more than 4 mW/cm^2 after determining that all parts are in good condition, functioning properly and the identical parts are replaced as listed in this manual notify that fact to ;

CENTRAL SERVICE CENTER

5-12-2 At least once a year have the microwave energy survey meter checked for accuracy by its manufacturer.

6. Troubleshooting

PRECAUTION

1. CHECK GROUNDING BEFORE CHECKING FOR TROUBLE.
2. BE CAREFUL OF THE HIGH VOLTAGE CIRCUIT.
3. DISCHARGE THE HIGH VOLTAGE CAPACITOR.
4. WHEN CHECKING THE CONTINUITY OF THE SWITCHES OR TRANSFORMER, DISCONNECT ONE LEAD WIRE FROM THESE PARTS AND THEN CHECK CONTINUITY WITHOUT THE POWER SOURCE ON. TO DO OTHERWISE MAY RESULT IN A FALSE READING OR DAMAGE TO YOUR METER.
5. DO NOT TOUCH ANY PART OF THE CIRCUIT OR THE CONTROL CIRCUIT BOARD, SINCE STATIC DISCHARGE MAY DAMAGE IT.
   ALWAYS TOUCH GROUND WHILE WORKING ON IT TO DISCHARGE ANY STATIC CHARGE BUILT UP.

6-1 Electrical Malfunction

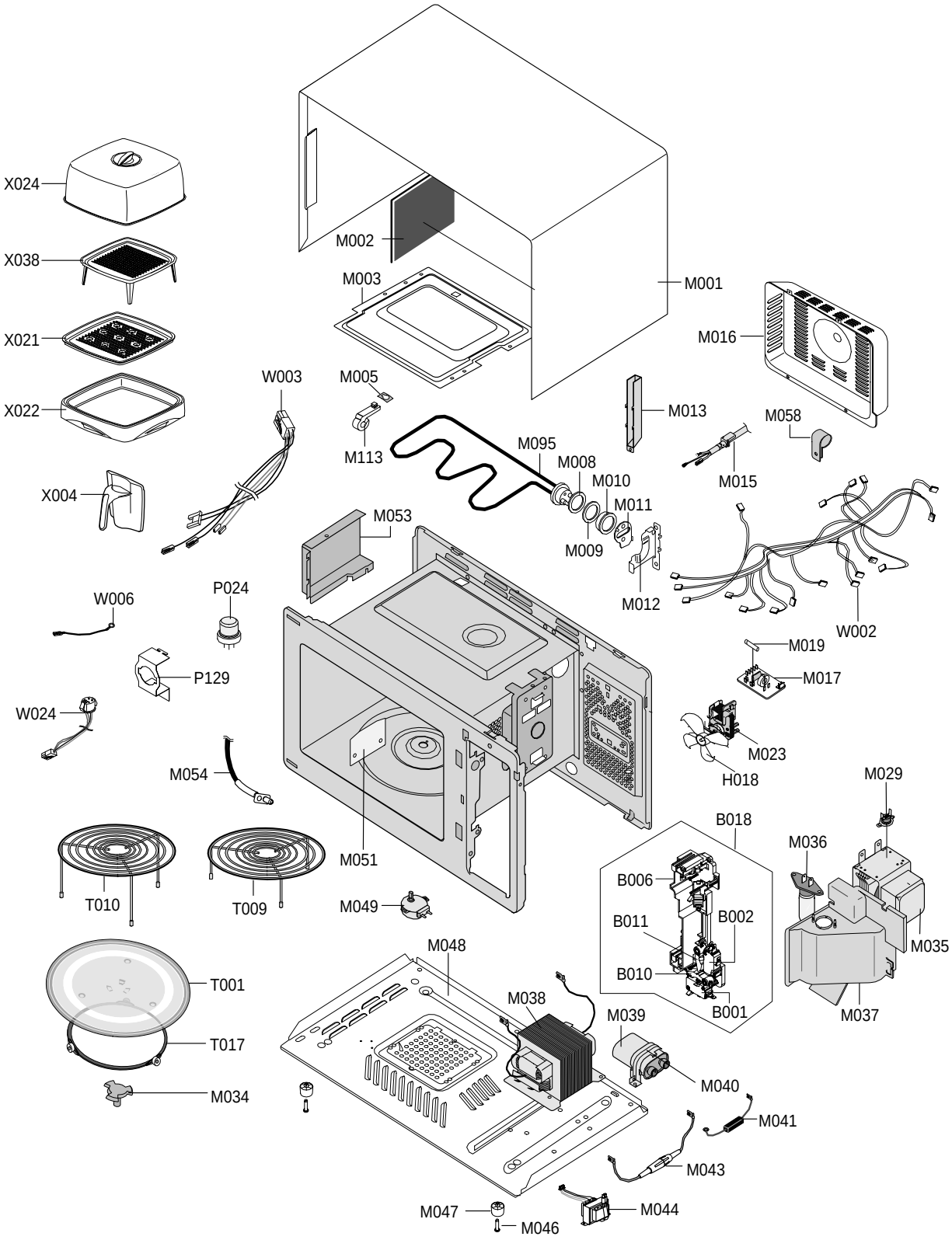
SYMPTOM	CAUSE	CORRECTIONS
Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness 2. Open thermal cutout (Magnetron) 3. Open low voltage transformer 4. Defective Ass'y PCB	Check fan motor when thermal cutout is defective. Check Ass'y PCB when L.V.T is defective.
No display and no operation at all. Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective monitor switch (NOTE1) 4. Shorted H.V.Capacitor 5. Shorted H.V.Transformer (NOTE2)	Check adjustment of primary, interlock monitor, power relay, door sensing switch.
	NOTE 1: All of these switches must be replaced at the same time. (refer to adjustment instructions) Check continuity of power relay contacts and if it has continuity, replace power relay also. NOTE 2: When H.V.Transformer is replaced, check diode and magnetron also.	
Oven does not accept key input (Program)	1. Key input is not in-Sequence 2. Open or loose connection of membrane key pad to Ass'y PCB 3. Shorted or open membrane panel 4. Defective Ass'y PCB	Refer to operation procedure. Replace PCB main.
Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on.)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to lower output and/or intermittent oscillation. 3. Defective high voltage components H.V.Transformer H.V. Capacitor H.V.Diode, H.V.Fuse Magnetron 4. Open or loose wiring of power relay 5. Defective primary latch switch 6. Defective power relay or Ass'y PCB	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Replace PCB main.

6-1 Electrical Malfunction(continued)

SYMPTOM	CAUSE	CORRECTIONS
Oven lamp and fan motor turn on	1. Misadjustment or loose wiring of primary latch switch 2. Defective primary latch switch	Adjust door and latch switches.
Oven can program but timer does not start.	1. Open or loose wiring of secondary interlock switch 2. Off-alignment of primary interlock 3. Defective secondary interlock S/W	Adjust door and interlock switches.
Microwave output is low;. Oven takes longer time to cook food.	1. Decrease in power source voltage. 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation)) 3. Aging of magnetron	Consult electrician.
Fan motor turns on when plugged in	Loose wiring of door sensing switch	Check wire of door sensing switch.
Oven does not operate and return to the plugged in mode.	Defective Ass'y PCB	Replace PCB main.
Loud buzzing noise can be heard.	1. Loose fan and fan motor 2. Loose screws on H.V.Transformer 3. Shorted H.V.Diode	Tighten screws of fan motor. Tighten screws of H.V.Transformer. Replace H.V.Diode.
Turntable motor does not rotate.	1. Open or loose wiring of turntable motor. 2. Defective turntable motor.	Replace turntable motor.
Oven stops operation during cooking	1. Open or loose wiring of primary interlock switch 2. Operation of thermal cutout(Magnetron)	Adjust door and latch switches.
Sparks	1. Metallic ware or cooking dishes touching on the oven wall. 2. Ceramic ware trimmed with gold or silver powder also causes sparks.	Inform the customer. Do not use any type of cookware with metallic trimming.
Uneven cooking	Uneven intensity of microwave due to its characteristics.	Wrap thinner parts of the food with aluminum foil. Use plastic wrap or cover with a lid. Stir once or twice while cooking foods such as soup, cocoa, or milk.
Noise from the turntable motor when it starts to operate.	Noise may result from the motor.	Replace turntable motor.

7. Exploded Views and Parts List

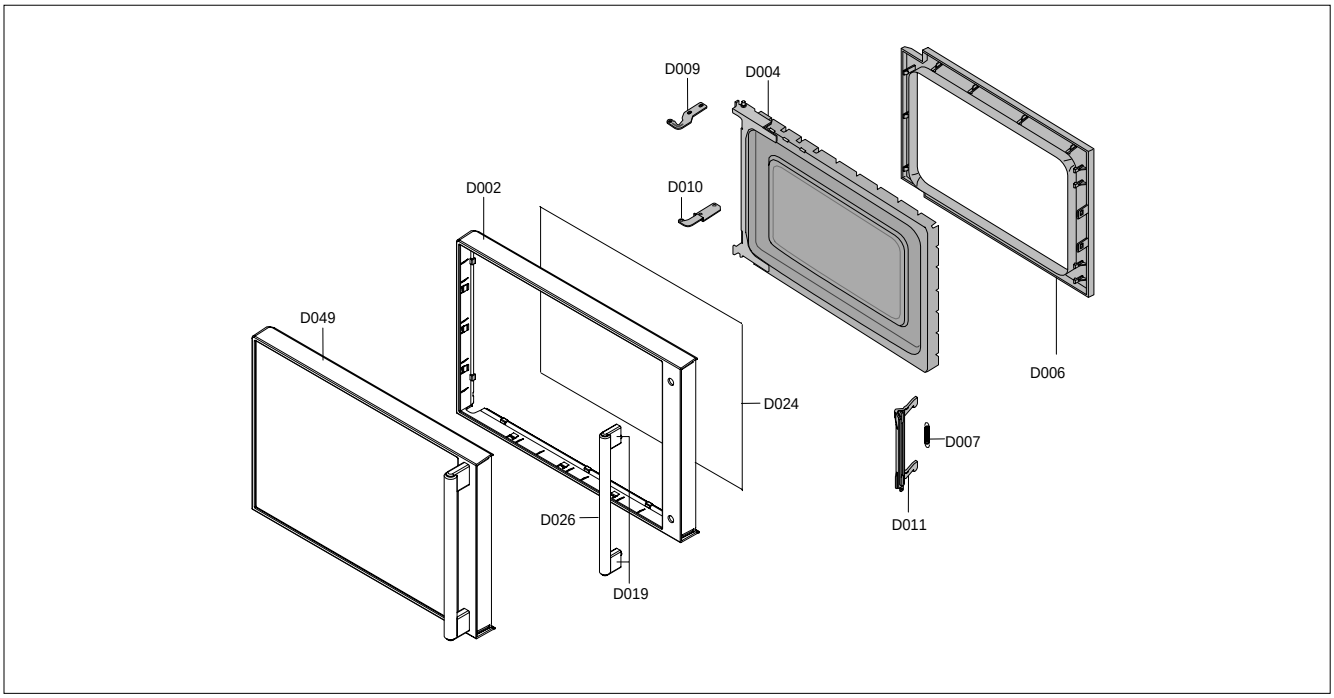
7-1 Exploded Views



7-2 Main Parts List - S.N.A : SERVICE NOT AVAILABLE

No.	Code No.	Description	Specification	Q'ty	Remark
B001	3405-001034	SWITCH-MICRO	125/250VAC,16A,200GF,SPST-N	1	DOOR
B002	3405-001032	SWITCH-MICRO	125/250VAC,16A,200GF,SPDT	1	
B006	DE72-00137B	LATCH-BODY	PG113R,NYLON,WHT,-,-,-,-,-	1	
B010	DE66-00093B	LEVER-SWITCH(A)	PG113R,NYLON,NTR,HANDLE,	1	
B011	DE66-00094B	LEVER-SWITCH(B)	PG113R,NYLON,NTR,HANDLE,	1	
B018	DE96-00120H	ASSY BODY LATCH	PG113R(TBMO/SIDE),NYLON	1	
M001	DE70-00185N	PANEL-OUTER	C115,SECC,T0.6,W405.7,L1090.	1	WHT
M001	DE70-00185Q	PANEL-OUTER	1.1 AQUA CONV,SECC,T0.6,-,-,PCM,	1	SILVER
M002	DE63-90035H	CUSHION-RUBBER	-,DFA20,T2,W190,L200,-,-	1	
M003	DE61-00438A	BRACKET-UPPER	C115,SECC,T0.5,-,-,-,1.1-C	1	
M005	DE61-70060A	SPRING-PLATE	-,SK-5,T0.5,-,-,-,-,-,-,-	1	
M008	DE63-20017A	GASKET-HEATER	-,BRASS,T1.5,OD30.5,ID22.5	1	
M009	DE60-40009B	WASHER-TEFLON	SLOT,ID22.2,OD28,T1.2,TEFL	1	
M010	DE61-50021A	BRACKET-FLANGE	-,SECC1,T0.8,32,32,-,-	1	
M011	DE61-50347A	BRACKET-EARTH	-,BSS2-A,T1.0,W35,L43,MBGF	1	
M012	DE61-50027B	BRACKET-HEATER	-,SECC,T1.0,W51,L55,CE945	1	
M013	DE61-50570C	BRACKET-AIR GUIDE	CK95,SECC,T0.8,-,-,-,D	1	
M015	DE39-00022B	ASSY POWER CORD	4819D,CK135,230V50Hz,-,-,-,-,-	1	
M016	DE63-00148A	COVER-BACK	C115,SECC,T0.5,-,-,-,-,-,1.1	1	
M017	DE96-00011A	ASSY NOISE FILTER	SN-3WUA,250V15A,3W 15A	1	
M019	3601-001197	FUSE-CARTRIDGE	250V,15A,SLOW-BLOW,CERAMI	1	
M023	DE31-00001D	MOTOR FAN	-,SMF-2D3EA,230V50Hz,-,M1D33CE	1	
H018	DE31-90020A	BLADE-FAN	ALSTAR,T0.6,W250,L250,-,-,-	1	
M029	DE47-20009A	THERMOSTAT	PW2N-520PB,160/60,250V/7.5A,H	1	
M034	DE67-00187A	COUPLER	CE1100,PPS(ESS840),-,-,-,-	1	
M035	OM75P(31)ERHN	ASSY-MAGNETRON	OM75P(31)ERHN	1	
M036	4713-001046	LAMP-INCANDESCENT	240V,104mA,25W,ORG,-,-	1	
M037	DE71-60016D	COVER-AIR	CK95,NYLYN#66(TEFRON523),-,-,-	1	
M038	DE26-00080B	TRANS H.V	SHV-EURO2,230V,50HZ,2340V/3.5V	1	
M039	2501-001015	C-OIL	1.0uF,2100V,BK,35X54X80,20mm	1	
M040	DE61-50106A	BRACKET-HVC	-,SECC,T0.8,W31,L125.8,-,-	1	
M041	DE91-70065A	ASSY-HVD	BMP28,SEMA,12KV,SUMI,-	1	
M043	DE91-70061A	ASSY-H.V.FUSE	THV060T-0800-H,5KV/0.80A,W	1	
M044	DE26-00101A	TRANS L.V	SLV-C115E,230V,50HZ,22V,7.5V,3	1	
M046	DE60-60025A	PIN-FOOT	PP-JI350,BLK,-,-,-,-,-,-	4	
M047	DE61-40065A	FOOT	-,PP,T2x22x17mm,BLK,-,-,-	4	
M048	DE80-00024E	BASE-PLATE	C110/C115,SCP1,T0.6,-,-,-,NC-	1	
M049	DE31-10170A	MOTOR SYNCHRONOUS	M2LJ24Z702,ST-16F,220/	1	
M051	DE71-00015A	COVER-CEILING	CE2933,-,T0.3,W114.2,L121.	1	
M053	DE97-00441A	ASSY-GUIDE AIR	CE1150/CE1160,SENSOR,-,-	1	
M054	DE32-10013A	SENSOR THERMISTOR	PT-312-K2,-,-,-,-,-,-	1	
M058	DE65-20014A	CABLE CLAMP	-,-,-,NY-66,-,DA-6N	1	P/CORD
M095	DE47-00001A	HEATER	SHG-2933E,-,-,1300W(1250W),-,230V	1	
M113	DE61-30006A	SUPPORT-HEATER	-,ALUMINA,5G,2ND-W/P,-,-	1	
P024	DE32-60013A	SENSOR GAS	ST-MWO,-,-,-,-,-,-	1	
P129	DE61-50301A	BRACKET-COVER	-,SBHG1-A,RE-707GMS,-,-,-	1	
T001	DE74-20015G	TRAY-COOKING	3RD-1.0,T6,1115G,HKS,-,-,-	1	
T009	DE97-00136B	ASSY-WIRE RACK	CK95,LOW-RACK,-,-,-,-	1	
T010	DE97-00136E	ASSY-WIRE RACK	MG104WA,114,FOOT,VE-TYPE	1	
T017	DE92-90189T	ASSY-GUIDE ROLLER	JES1044,PPS 14.7DI,-,-	1	
W002	DE96-00292A	ASSY-WIRE HARNESS-A	CE1115/XEF,CONVECTIO	1	
W003	DE96-00296A	ASSY-WIRE HARNESS-B	CE1100/XEF,CONVECTIO	1	
W006	DE39-40409A	WIRE HARNESS-E	230V50HZ,M9G45,CTW,-,-,-	1	
W024	DE96-00315A	ASSY-WIRE HARNESS-SENSOR	CE1150/XEF,CONV	1	
X004	DE99-00242J	ASSY-CLEAN WATER BOWL	CE1150R-S/BWT,SPS(LG SP2306FS)	1	
X021	DE70-00384A	PLATE-STEAM	C115,STS304,-,T0.5,-,-,-,-,-	1	
X022	DE75-00034A	BOWL-STEAM	C115,HEAT-RESISTING PP,-,-,-,	1	
X024	DE63-00189A	COVER-STEAM BOWL	C115,STS304,T0.5,-,-,-,	1	
X038	DE75-00037A	RACK-STEAM	C110/C115,PP(HI831),STEAM BOW	1	

7-3 Door Parts List

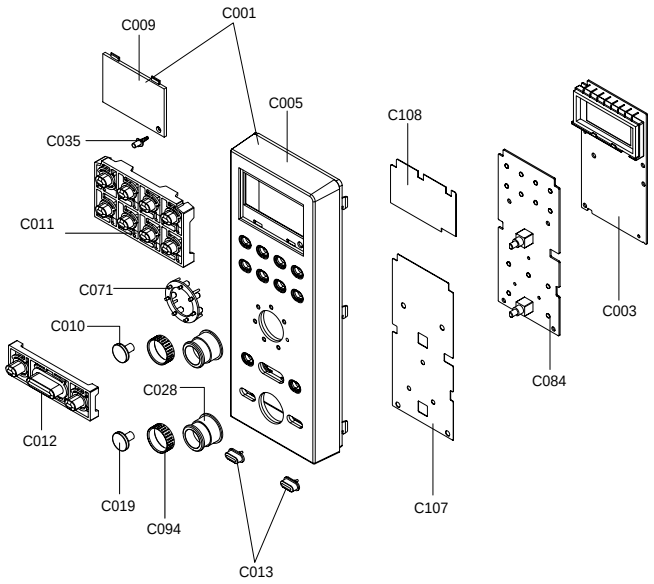


No.	Code No.	Description	Specification	Q'ty	Remark
D002	DE64-00776A	DOOR-A	C115,PC LEXAN#141,WHT,1.1 CONV,-,	1	
D004	DE94-00428E	ASSY DOOR-E	1.1 AQUA CONV,SEALANT,-	1	
D006	DE64-01043A	DOOR-C	CE1100,PBT,-,-,-,-,BLK,1.1 AQUA C	1	
D007	DE61-00193A	SPRING-KEY	MW1255,HSWR,PI0.6,-,D5.5,L19,	1	
D009	DE61-00246A	HINGE-DOOR UPPER	MW8103SS,SCP1,T2.0,-,-,	1	
D010	DE61-00247A	HINGE-DOOR LOWER	MW8103SS,SCP1,T2.0,-,-,	1	
D011	DE64-00690A	KEY-DOOR	TBMO-EURO,NYLON#66,-,-,BLK,-,SI	1	
D019	DE64-01067B	HANDLE-DOOR	1.1 AQUA CONV,PC LEXAN#141,-,-,-,-,SIL	2	
D024	DE64-00984A	SCREEN-DOOR(B)	C100/C115,TEMP-GLASS,T3.2	1	WHT
D024	DE64-00984B	SCREEN-DOOR(B)	CE1150-SL,TEMP-GLASS,3.2,-,-,-,SILVER,1.1AQUA	1	SILVER
D026	DE64-00980A	HANDLE-COVER	C110/C115,PP(HI831),CONV-1.1,STEAM BOWL	1	
D049	-	ASSY DOOR	CE1110/XEU,WHT,SEUK	1	WHT(S.N.A)
D049	-	ASSY DOOR	CE1150-SL,PC LEXAN#141,-,-,-,-,SILVER,1.1 AQUA CON		SILVER(S.N.A)

S.N.A : SERVICE NOT AVAILABLE

7-4 Control Parts List

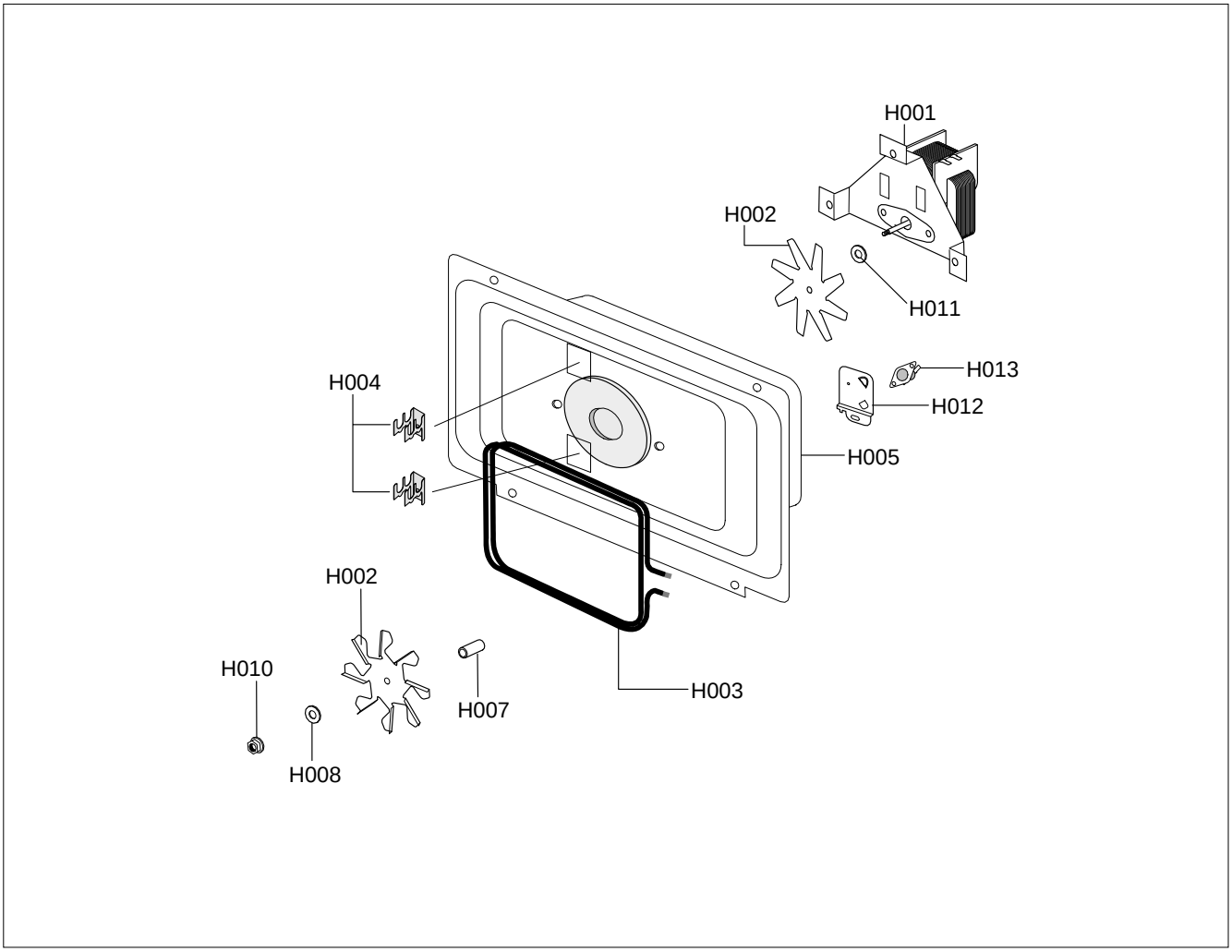
ASSY- CONTROL BOX - C082



No.	Code No.	Description	Specification	Q'ty	Remark
C001	DE94-00913C	ASSY CONTROL-PANEL	-,CE1150R/BWT,WHT,RUSSIA	1	WHT
C001	DE94-00913D	ASSY CONTROL-PANEL	-,CE1150R-SL/BWT,SILVER,RUSSIA	1	SILVER
C003	RC-CE1150-01	ASSY PCB PARTS	CE1151T/XEF,230V50HZ	1	
C005	DE64-00779C	CONTROL-PANEL	CE1150R/BWT,PC LEXAN#141,-,-,-,-,WHT,	1	WHT
C005	DE64-00779J	CONTROL-PANEL	CE1150R-S/BWT,PC LEXAN#141,-,-,-,-,PURE-SILVER,	1	SILVER
C009	DE64-00780A	WINDOW-DISPLAY	C115,SAN(CR5381),SMG,1.1	1	
C010	DE64-00789B	BUTTON-SELECT	CE1150,PC LEXAN#141,-,-,WH	1	WHT
C010	DE64-00789D	BUTTON-SELECT	CE1150-SL,PC LEXAN#141,-,-,SILVER,-	1	SILVER
C011	DE64-00781A	BUTTON-SELECT(A)	C115,PC LEXAN#141,1.1 C	1	WHT
C011	DE64-00781B	BUTTON-SELECT(A)	CE1150-SL,PC LEXAN#141,-,-,SILVER,-	1	SILVER
C012	DE64-00782A	BUTTON-SELECT(B)	C115,PC LEXAN#141,1.1 C	1	WHT
C012	DE64-00782B	BUTTON-SELECT(B)	CE1150-SL,PC LEXAN#141,-,-,SILVER,-	1	SILVER
C013	DE64-00783A	BUTTON-SELECT(C)	C115,PC LEXAN#141,1.1 C	2	WHT
C013	DE64-00783B	BUTTON-SELECT(C)	CE1150-SL,PC LEXAN#141,-,-,SILVER,-	2	SILVER
C019	DE64-00789F	BUTTON-START	CE1150R/BWT,PC LEXAN#141,-,-,WHITE,-	1	WHT
C019	DE64-00789E	BUTTON-START	CE11505-S/BWT,PC,-,-,SIL,1.1 AQUA CONVECTION	1	SILVER
C028	DE64-00787A	KNOB-COVER	C115,PC LEXAN#141,1.1 CONV,-,	2	WHT
C028	DE64-00787B	KNOB-COVER	CE1150-SL,PC LEXAN#141,-,-,-,-,SILVER,-,-	2	SILVER
C035	DE64-00946A	BUTTON-CLOCK	C115,PC LEXAN#141,-,-,-,-	1	
C071	DE63-00150A	COVER-LED	C115,ABS CLEAR,1.1 CONV,-,-,-,	1	
C082	-	ASSY CONTROL-BOX	-,CE1150R/BWT,WHT,RUSSIA	1	WHT(S.N.A)
C082	-	ASSY CONTROL-BOX	-,CE1150R-SL/BWT,SILVER,RUSSIA	1	SILVER(S.N.A)
C084	DE96-00318A	ASSY-KEY MODULE	DKM-CE1150,KEY-MODULE	1	
C094	DE69-00351A	BAND-BUTTON DIAL	FC139ST(FBI),SILICON RU	2	
C107	DE01-00141A	FILM-BOARD	-,1.1AQUA CONV.,PET,T0.1,-,-	1	
C108	DE01-00142A	FILM-WINDOW	-,1.1AQUA CONV.,PET,T0.2,-,-	1	

S.N.A : SERVICE NOT AVAILABLE

7-5 Casing Parts List



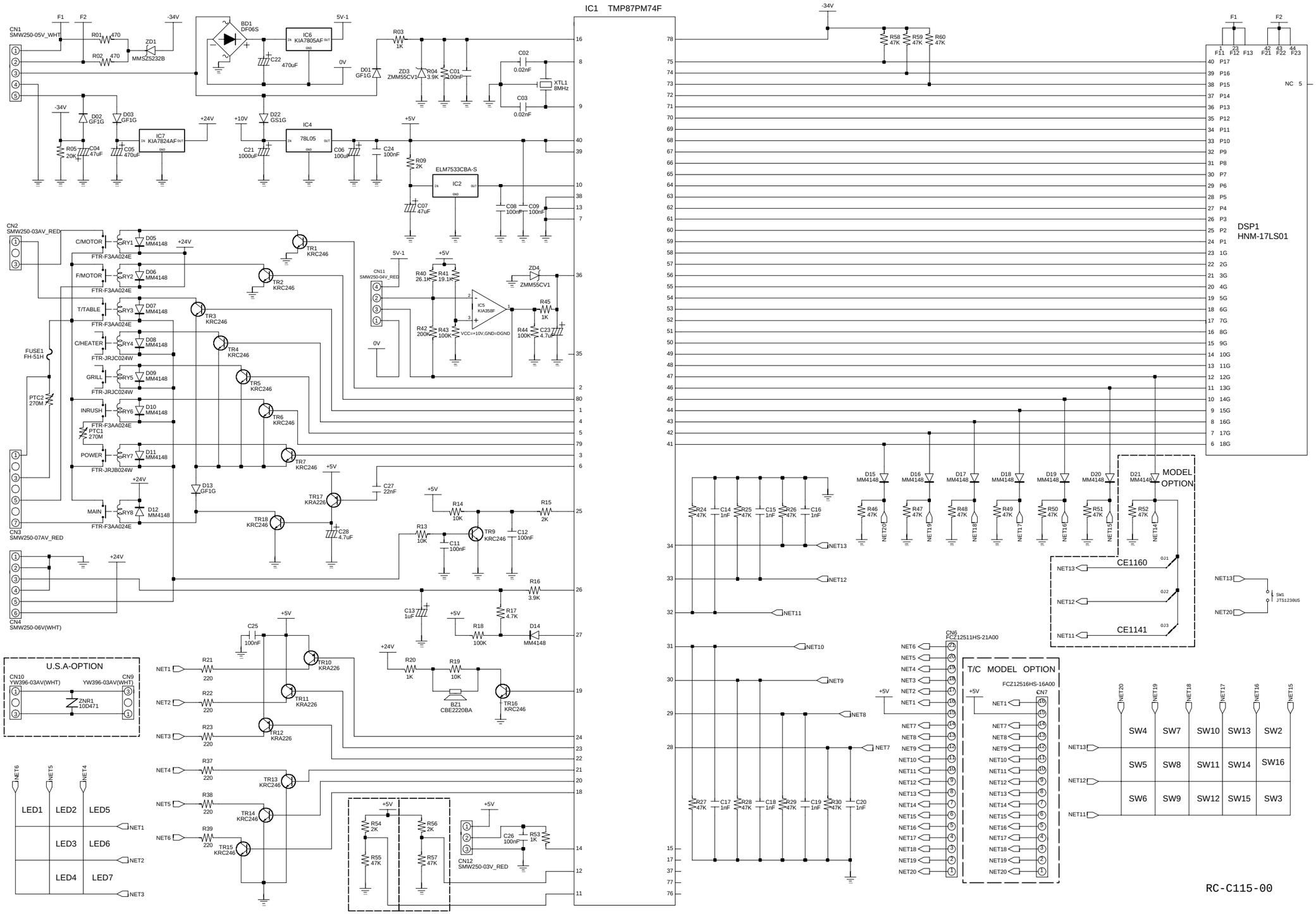
No.	Code No.	Description	Specification	Q'ty	Remark
H001	DE31-10171A	MOTOR CONVECTION	SMC-105EA,230V/50HZ,280	1	
H002	DE31-90019A	BLADE-FAN	SECC,T0.6,-,-,-,-,-	1	
H002	DE31-90020A	BLADE-FAN	ALSTAR,T0.6,W250,L250,-,-,-	1	
H003	DE47-70077A	HEATER-CONVECTION	SHC-118E1,-,-,1680W,-	1	
H004	DE61-50484A	BRACKET-HEATER	-,STS430,T0.8,W27.2,L26,C	2	
H005	DE97-00393A	ASSY-COVER CASING	C110,1.1CU.FT,AQUA CON	1	
H007	DE72-30016A	BUSH-MOTOR	-,MSWR3,L11.2,D5.6,RE-1300,-	1	
H008	DE60-40026B	WASHER-PLAIN	ID5.5,OD12,T1.0,SBC1,ZNC3,-	1	
H010	DE60-30016A	NUT-FLANGE	M4,MSWR10,-,-,-,-,-,-	1	SENSOR
H011	DE60-40014B	WASHER-C MOTOR	M16,T1.0,SECC,ZNC3,-,-,-	1	
H012	DE61-50490A	BRACKET-TCO	-,SECC1,T0.6,34,58,-,-	1	
H013	DE47-20009A	THERMOSTAT	PW2N-520PB,160/60,250V/7.5A,H	1	

7-6 Standard Parts List

Code No.	Description	Specification	Q'ty	Remark
DE60-20063A	BOLT-FLANGE	M4,10,ZPC3,YEL,MSWR,-,-,-,-	4	HING-L/U
DE60-30016A	NUT-FLANGE	M4,MSWR10,-,-,-,-,-,-,-	1	SENSOR
DE60-30016B	NUT-FLANGE	M4,MSWR10,FEFN,-,-,-,-,-,-	3	-
DE60-10082H	SCREW-A	-,-,-,-,2S-4X12,TOOTHED,-,-,-,-	5	P-OUTER
DE60-10018A	SCREW-ASSY MACHINE	-,WS,MSWR10,SN1,PH,M4X0.7P,-,8,-,-	2	B-EARTH
DE60-10098A	SCREW-ASSY TAP TITE	-,GLD,SWRCH18A,ZPC2,PH,TC,-,M4X8,WT,-	2	M-DRIVE
DE60-10045A	SCREW-TAP PH	-,-,FEFZY,-,PH,M3,-,L6,-,-	2	-
DE60-10052A	SCREW-TAP PH	-,-,FEFZY,-,PH,M4,-,L8,-,-	2	A-A-RIGHT
DE60-10045A	SCREW-TAP PH	-,-,FEFZY,-,PH,M3,-,L6,-,-	1	-
DE60-10088A	SCREW-TAP PH	-,-,FEFZY,PLAIN,PH,M3,-,L8,-,-	9	-
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	2	A-A-LEFT
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	4	A-C-BACK
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	3	A-CASING
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	1	A-THERMO-G
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	1	B-A-GUIDE
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	2	B-LATCH
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	1	B-UPPER
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	1	C-AIR
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	2	C-BOX
DE60-10070A	SCREW-TAP TH	-,-,FEFZY,2-SLOT,TH,M4,-,L12,-,-	2	M-FAN
DE60-10122A	SCREW-TAP TH	-,-,FE,FN,TAP,TH,-,2-4X8,-,-	3	B-HEATER
DE60-10122A	SCREW-TAP TH	-,-,FE,FN,TAP,TH,-,2-4X8,-,-	2	C-CEILING
DE60-10122A	SCREW-TAP TH	-,-,FE,FN,TAP,TH,-,2-4X8,-,-	1	SENSOR
DE60-10122A	SCREW-TAP TH	-,-,FE,FN,TAP,TH,-,2-4X8,-,-	3	B-C-MOTOR
DE60-10122A	SCREW-TAP TH	-,-,FE,FN,TAP,TH,-,2-4X8,-,-	2	BKT-HEATER
DE60-10122A	SCREW-TAP TH	-,-,FE,FN,TAP,TH,-,2-4X8,-,-	4	CV-CAS
DE60-10012A	SCREW-TAP TITE	-,SWR10,M4,L10,TH,+,-,3,ZPC2,-	1	A-N-FILTER
DE60-10012A	SCREW-TAP TITE	-,SWR10,M4,L10,TH,+,-,3,ZPC2,-	1	A-P-CORD
DE60-10012A	SCREW-TAP TITE	-,SWR10,M4,L10,TH,+,-,3,ZPC2,-	3	B-PLATE
DE60-10012A	SCREW-TAP TITE	-,SWR10,M4,L10,TH,+,-,3,ZPC2,-	1	C-B-EARTH
DE60-10012A	SCREW-TAP TITE	-,SWR10,M4,L10,TH,+,-,3,ZPC2,-	1	M-D-CONVE
DE60-10012A	SCREW-TAP TITE	-,SWR10,M4,L10,TH,+,-,3,ZPC2,-	1	B-T-MOTOR
DE60-10034A	SCREW-TH	-,-,L10,STS304,TH,+,-,M4,-,-	1	SENSOR
DE60-10080B	SCREW-WASHER	-,2S,SWRCH18A,ZP2,PH,PI5,-,L10,-,-	4	MAGNETRON
DE60-10080B	SCREW-WASHER	-,2S,SWRCH18A,ZP2,PH,PI5,-,L10,-,-	4	TRANS-HV

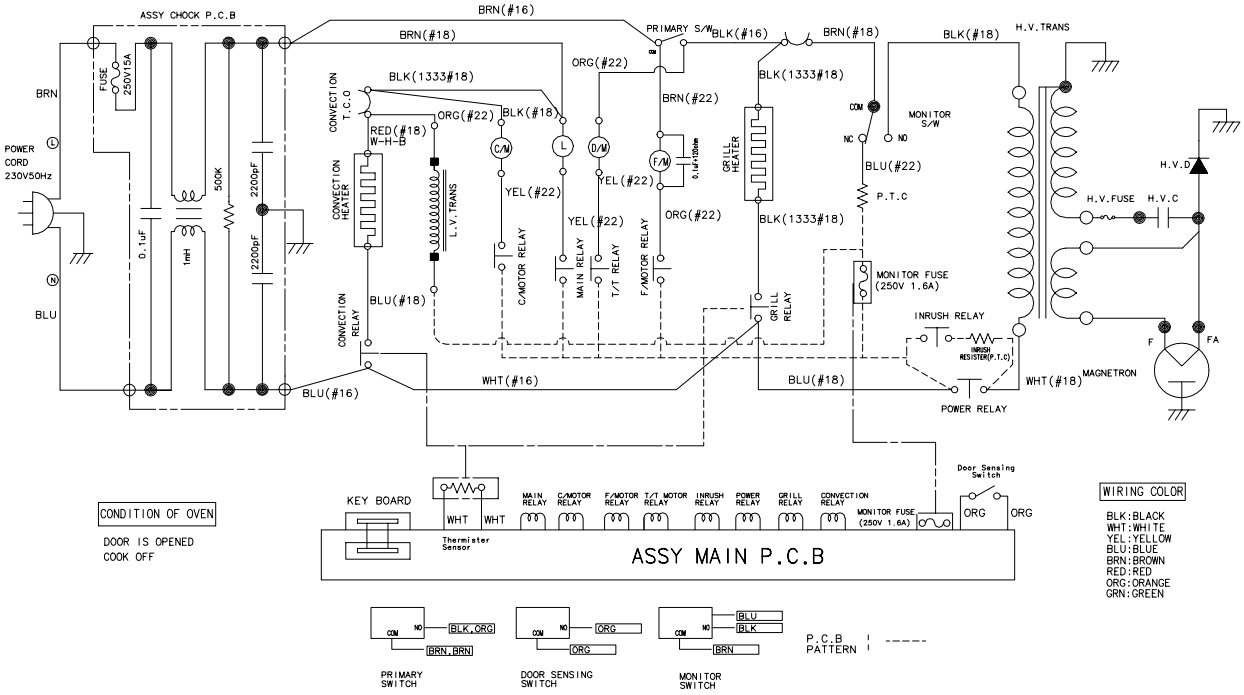
8.P.C.B Diagrams

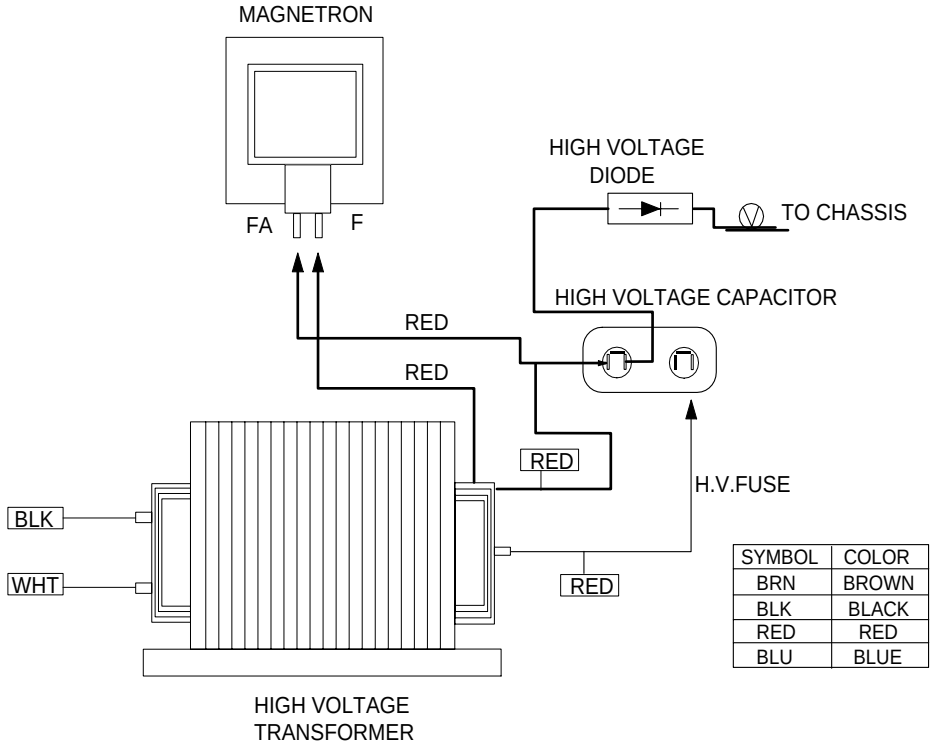
8-1 P.C.B Diagrams (This Document can not be used without Samsung's authorization.)



9. Schematic Diagrams

9-1 Schematic Diagrams (This Document can not be used without Samsung's authorization.)





8-2 P.C.B Parts List

Code No.	Description	Specification	Q'ty	Remark
3501-001062	RELAY-POWER	24VDC,523.2MW,16000MA,1FORMA,15MS,10MS	1	RY7
3501-001068	RELAY-POWER	24VDC,523MW,16000MA,1FORMA,15MS,10MS	1	RY4
3501-001068	RELAY-POWER	24VDC,523MW,16000MA,1FORMA,15MS,10MS	1	RY5
3501-001155	RELAY-MINIATURE	24VDC,200MW,3000MA,1FORMA,10MS,10MS	5	RY1,RY2,RY3,RY6,RY8
3601-001126	FUSE-CARTRIDGE	250V,1.6A,FAST-ACTING,CERAMIC,5x20mm	1	FUSE1
3708-000219	CONNECTOR-FPC/FFC/PIC	21P,1.25MM,STRAIGHT,SN,ZIF,-,SINGLE	1	CN6
DE07-00060A	VF DISPLAY	HNM-17LS01,HNM-17LS01,90*40*9.0,1/18,ND17,NS16	1	DSP1
DE09-00361A	IC MICOM	TMP87CM74F-5BE0,CE1150R-SL/BWT,80PIN,+5V,8Mhz,	1	IC1
DE30-20016A	BUZZER	CBE2220BA,STICK,-,-,-,-,-,-,-	1	BZ1
DE47-40024A	HOLDER-FUSE	FH-51H,7.5A,-,-,-,-,-	1	FUSE1
DE61-00504A	HOLDER-DIGITRON	NEW-WAVE,PP,-,-,-,BLK,-	1	DSP1
0401-001083	DIODE-SWITCHING	MM4148,100V,150MA,LL-34,TP	16	D05~D12,D14~21
0402-001080	DIODE-RECTIFIER	GF1G,400V,1A,DO,TP	5	D01~D03,D13,D22
0402-001298	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	1	BD1
0403-000507	DIODE-ZENER	MMSZ5232B,5.6V,5%,500mW,MELF,T	1	ZD1
0403-001288	DIODE-ZENER	ZMM55C5V1,4.8-5.4V,500MW,LL-34,TP	2	ZD3,ZD4
0504-001008	TR-DIGITAL	RN2427,PNP,200MW,2.2K/10K,SOT-23,TP	4	TR10~TR12,TR17
0504-001080	TR-DIGITAL	KRC246S,NPN,200mW,2.2K/10K,SOT-23,TP	13	TR1~TR7,TR9,TR13~16,TR18
1201-000167	IC-OP AMP	KA358,SOP,TP,8P,150MIL,DUAL,100V/MV,PLASTIC,	1	IC5
1203-001037	IC-POSI.FIXED REG.	78L05,SOT-89,3P,185MIL,PLASTIC	1	IC4
1203-002835	IC-POSI.FIXED REG.	KIA7805AF,DPAK,3P,6.6X6.1MM,PLASTIC,4.8V/	1	IC6
1203-002836	IC-POSI.FIXED REG.	KIA7824AF,DPAK,3P,6.6X6.1MM,PLASTIC,23/25V	1	IC7
1203-002876	IC-VOL. DETECTOR	ELM7533CBA-S,SOT-23,3P,2.9X1.5MM,PLASTIC	1	IC2
1404-000230	THERMISTOR-PTC	27ohm,20%,-,265V,1.5A,360mA,BK	2	PTC1,PTC2
2007-000033	R-CHIP	0ohm,5%,1/4W,TP,3216	16	J2~J7,J9,J12~20
2007-000277	R-CHIP	100Kohm,1%,1/8W,TP,2012	2	R18,R43
2007-000282	R-CHIP	100Kohm,5%,1/8W,TP,2012	1	R44
2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	3	R13,R14,R19
2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	3	R03,R20,R45
2007-000532	R-CHIP	200Kohm,5%,1/8W,TP,2012	1	R42
2007-000546	R-CHIP	20Kohm,5%,1/8W,TP,2012	1	R05
2007-000572	R-CHIP	220ohm,5%,1/8W,TP,2012	6	R21~R23,R37~R39
2007-000671	R-CHIP	2Kohm,5%,1/8W,TP,2012	2	R09,R15
2007-000710	R-CHIP	3.9Kohm,5%,1/8W,TP,2012	2	R04,R16
2007-000868	R-CHIP	4.7Kohm,1%,1/8W,TP,2012	1	R17
2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	2	R01,R02
2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	19	R24~R30,R46~R52,R55,R57~R60
2007-001262	R-CHIP	19.1Kohm,1%,1/8W,TP,2012	1	R41
2007-007219	R-CHIP	26.1Kohm,1%,1/8W,TP,2012	1	R40
2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012,	7	C01,C08,C09,C11,C12,C24,C25
2203-000444	C-CER,CHIP	1nF,10%,50V,X7R,TP,2012,-	7	C14~C20
2203-000555	C-CER,CHIP	0.02NF,5%,50V,C0G,TP,2012	1	C02,C03
2203-000889	C-CER,CHIP	4.7nF,10%,50V,X7R,TP,2012	1	C27
2401-000037	C-AL	470uF,20%,16V,GP,TP,8x11.5,5	1	C22
2401-000151	C-AL	1000uF,20%,25V,GP,TP,10x20,5	1	C21
2401-000244	C-AL	100uF,20%,10V,GP,TP,6.3x7,5	1	C06
2401-001428	C-AL	470uF,20%,50V,GP,TP,10x20,5	1	C05
2401-001573	C-AL	47uF,20%,50V,GP,TP,6.3x11,2.5	1	C04,C07
2401-002075	C-AL	4.7uF,20%,50V,GP,TP,5x11,5	1	C23
2404-000151	C-TA,CHIP	1uF,20%,16V,-,TP,3216	1	C13
2404-000232	C-TA,CHIP	4.7uF,20%,10V,-,TP,3216	1	C28
2801-003933	CRYSTAL-UNIT	8MHz,50ppm,28-AAA,12pF,70ohm,TP	1	XTL1
3404-001129	SWITCH-TACT	12VDC,50mA,160gf,6.6x6.6x7mm,-	1	SW1
3711-000939	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGHT,SN	1	CN11
3711-000999	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	CN1
3711-001038	CONNECTOR-HEADER	BOX,6P,1R,2.5mm,STRAIGHT,SN	1	CN4
3711-004143	CONNECTOR-HEADER	BOX,2P,1R,5MM,STRAIGHT,SN,RED	1	CN2
3711-004200	CONNECTOR-HEADER	BOX,4P/7P,1R,2.5MM,STRAIGHT,SN,RED	1	CN3